

Notice of Allowability	Application No.	Applicant(s)	
	09/977,271	PARSSINEN ET AL.	
	Examiner	Art Unit	
	Lana N Le	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/11/01.
2. ☒ The allowed claim(s) is/are 1-48.
3. ☒ The drawings filed on 11 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>021103</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with applicant's representative, Alfred Fressola, on 06/10/05.

3. The application has been amended as follows:

In the Claims:

In claims 2-17 and claims 21-33 at the beginning of the claim, delete "A method" and add "The method";

In claim 1, line 1, after "determining", delete "the" and add "an";

In claim 1, line 8, after "based upon", delete "the" and add "a";

In claim 3, line 9, delete "9)" and add ---10)---;

In claim 3, line 9, after "if step" delete "8" and add "9"; after "true" add ---,---; and after "steps", delete "7 and 8" and add ---8 and 9---;

In claim 3, line 10, delete "10)" and add "11)";

In claim 3, line 10, after "step", delete "8" and add --9---; and after "steps 3, 6, 7" delete "6, 7 and 8" and add ---7, 8 and 9---;

In claim 3, line 12, delete "step 7" and add ---step 8---;

In claim 4, line 3, after "determining", delete "the" and add --a---;

In claim 5, line 3, after "measuring", delete "the" and add --a---; after "at", delete "the" and add --an---;

In claim 5, line 11, after "are" delete --the--;

In claim 6, at line 6, after "adjusting", delete --the--- and add ---a---;

In claim 6, at line 8, before "maximum" add --a--;

In claim 6, line 15, after "limits" delete "." and add ----;and where RSSI_TARGET is an RSSI target level.---;

In claim 7, line 2, before ",wherein", delete --5-- and add --6--; line 7, after "is" delete --the--;

In claim 7, line 7, after "is", delete --the--;

In claim 8, line 2, after "measuring", add --the--;

In claim 9, line 2, after "measuring", add --the--;

In claim 10, line 4, after "adjusting", delete "the" and add --a--;

In claim 11, line 4, after "adjusting", delete "the" and add --a--;

In claim 12, line 4, after "adjusting", delete "the" and add --a--;

In claim 12, line 5, after "adjustment in", delete "the" and add --an--;

In claim 13, line 2, after "signal", delete "level" and add ---strength (RSSI)---;

In claim 13, line 4, after "adjusting", add --the--;

In claim 13, line 5, delete "the" and add --a--;

In claim 13, line 5, after "of" add --the---;

In claim 13, line 5, after "and" add --the--;

In claim 14, line 2, after "adjusts", delete "the" and add --an--;

Art Unit: 2685

In claim 14, line 3, after "reduce", add --a--;

In claim 15, line 2, after "signal", delete "level" and add ---strength (RSSI)---

In claim 15, line 4, after reducing, delete "the" and add ---a---

In claim 16, line 2, after "signal", delete "level" and add ---strength (RSSI)---

In claim 18, line 5, after "received", add --desired--;

In claim 18, line 8, after "of the", add --desired--;

In claim 18, line 10, after "based upon", delete "the" and add "a";

In claim 20, line 8, after "based upon", delete "the" and add "a";

In claim 22, line 3, after "determining", delete "the" and add --a--;

In claim 23, line 3, after "measuring", delete "the" and add --a--; after "at", delete "the" and add --an--;

In claim 24, line 3, after "measuring", delete "the" and add --a--, at line 8,

In claim 24, line 6, after "adjusting", delete --the---

In claim 24, line 11, after "step is", delete "the" and add --a--;

In claim 24, line 12, after "to the", add --desired--;

In claim 25, line 2, after "wherein", delete "the" and add --a--;

In claim 25, line 7, after "is", delete "the";

In claim 26, line 2, after "measuring", add ---the---

In claim 27, line 4, after "adjusting", delete "the" and add --a--;

In claim 27, line 6, after "for", add "a";

In claim 28, line 4, after "adjusting", delete "the" and add --a--;

In claim 28, line 6, after "for", add "a";

Art Unit: 2685

In claim 29, line 4, after "adjusting", delete "the" and add -a--;

In claim 29, line 6, after "for", add "a";

In claim 30, line 2, after "signal", delete "level" and add ---strength (RSSI)---;

In claim 30, line 5, after "function of", delete "the" and add -a--;

In claim 30, line 5, after "value of" add -the---;

In claim 30, line 5, after "and" add -the--;

In claim 31, line 2, after "adjusts", delete "the" and add -an--;

In claim 31, line 5, after "reduce", add -a--;

In claim 32, line 2, after "signal", delete "level" and add ---strength (RSSI)---;

In claim 32, line 2, delete "20" and add -22--;

In claim 32, line 4, after "reducing", delete "the" and add -a--;

In claim 34, line 1, after "determining", delete "the" and add -an--;

In claim 34, line 11, after "with", delete "the" and add -an--;

In claims 35-41, at the beginning of the claim, delete "An" and add -The--;

In claim 36, line 2, after "with", delete "the" and add -a--;

In claim 38, line 2, after "amplify", delete "the" and add -a--;

In claim 38, line 3, after "adjusting", delete "the" and add -a--;

In claim 39, line 3, after "determining", delete "the" and add -a--;

In claim 40, line 4, after "measure", delete "the" and add -an--;

In claim 41, line 2, after "if", delete "the" and add -a--;

In claim 41, line 2, after "signal", delete "level" and add ---strength (RSSI)---;

In claim 41, line 3, delete "so as" and add ---and if true,----;

Art Unit: 2685

In claim 41, line 3, after "reduce", delete "the" and add ---a---;

In claim 41, lines 4-5, delete "if said condition is true";

In claim 42, line 1, after "having", add "an";

In claim 42, line 14, after "with", delete "the" and add -an--;

In claim 42, line 15, after "determining", delete "the" and add -an---;

In claim 43, line 1, after "having", add "the";

In claim 44, line 1, after "having", add "the";

In claim 44, line 3, after "with", delete "the" and add -a--;

In claim 45, line 1, after "having", add "the";

In claim 46, line 1, after "having", add "the";

In claim 46, line 2, after "amplify", delete "the" and add -a--;

In claim 47, line 1, after "having", add "the";

In claim 48, line 1, after "having", add "the";

In claim 48, line 2, delete "42" and add -45---;

In claim 48, line 3, after "signal", delete "level" and add ---strength (RSSI)---;

In claim 48, line 4, after "time", delete "so as" and add ---and if true,---;

In claim 48, line 4, after "reduce", delete "the" and add ---a----.

In claim 48, line 5, after "(ADC_N)", delete ---if said condition is true----.

REASON FOR ALLOWANCE

1. Claims 1-48 are allowable over the cited prior art.
2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, Mousley (US 6,515,609) discloses a method for determining the amount of resolution required for decoding a desired radio channel, comprising the steps of:

2) measuring (via stage 30, 31) the received signal strength (measuring signal characteristics) of the radio channel (col 3, lines 29-34; col 4, lines 12-17);

determining (via 36) the amount of resolution (via dynamically adjusting the resolution) for decoding the desired radio channel using the received signal characteristics (col 3, lines 29-34; col 4, lines 5-16).

However, Mousley and the cited prior art fail to disclose:

1) obtaining a target resolution for decoding a desired radio channel assuming that potentially interfering radio channels are filtered out;

3) determining the amount of resolution based upon the full-scale resolution of an analog-to-digital converter, the target resolution, and the received signal strength;

4) re-measuring RSSI;

5) determining if the new RSSI value is within certain threshold limits specified for that measurement; and

6) if step 5 is true, repeating steps 4 and 5;

otherwise repeating steps 3, 4 and 5.

Regarding claim 18, Mouldsley (US 6,515,609) discloses a method for determining the amount of resolution required for converting a received desired radio channel from the analog domain to the digital domain (A/D conversion), comprising the steps of:

2) measuring (via stages 30, 31; fig. 1) the received signal strength (signal characteristics) of the radio channel (col 3, lines 29-34; col 4, lines 12-17); and

determining (via 36; fig. 1) the amount of resolution (by dynamically adjusting the resolution) using the received signal characteristics and adjacent channel interference (col 3, lines 29-34; col 4, lines 5-16).

However, Mouldsley (US 6,515,609) and the cited prior art fail to disclose:

1) obtaining a target resolution for converting the received radio channel from the analog domain to the digital domain assuming that potentially interfering radio channels are filtered out;

3) determining the amount of resolution based upon the full-scale resolution of an analog-to-digital converter used for the A/D conversion, the target resolution, and the received signal strength;

4) remeasuring RSSI;

5) checking if the new RSSI value is within certain limits specified for that measurement; and

6) if step 5 is true, repeating steps 4 and 5;

otherwise repeating steps 3, 4 and 5.

Art Unit: 2685

Regarding claim 20, Mousley (US 6,515,609) discloses a method for determining the amount of resolution required for decoding a desired radio channel, comprising the steps of:

2) measuring (via stages 30, 31; fig. 1) the received signal strength (signal characteristics) of the radio channel (col 3, lines 29-34; col 4, lines 12-17);

determining (via 36; fig. 1) the amount of resolution (via dynamically adjusting the resolution) based upon the received signal characteristics (col 3, lines 29-34; col 4, lines 5-16).

However, Mousley and the cited prior art fail to disclose:

1) obtaining a target resolution for decoding a desired radio channel assuming that potentially interfering radio channels are filtered out;

3) determining the amount of resolution based upon the full-scale resolution of an analog-to-digital converter, the target resolution, and the received signal strength;

4) remeasuring RSSI; and

5) repeating steps 3 and 4.

Regarding claim 34, Mousley (US 6,515,609) discloses an apparatus (fig. 1) for determining the amount of resolution required for decoding a desired radio channel, comprising:

an analog to digital converter (32, 33), the ADC converting an analog input signal received at an input into a digitized radio channel at the output 34 of Q1 (col 3, lines 12-25);

Art Unit: 2685

a measuring stage (30, 31) having an input in communication with the analog input of the ADC 32, 33 so as to measure the signal characteristics of the radio channel (col 3, lines 29-34; col 4, lines 12-17);

control logic (36) that has an input in communication with the interference measuring stage 30, 31 so as to determine the amount of resolution based upon the characteristics of the input signal and the adjacent radio channel interference (col 3, lines 29-34; col 4, lines 5-16);

means for communicating the determined amount of resolution to the ADC (output to Q1, Q2) so that the ADC operates at the resolution (col 3, lines 32-34).

Moulsley (US 6,515,609) fails to disclose:

a) the ADC having a full scale resolution and operable at a resolution that can be less than the full scale resolution; the ADC operable at a resolution that can be less than the full scale resolution;

b) a power detector having an input in communication with the digital output of the analog to digital converter;

c) the control logic that has an input in communication with the output of the power detector so as to determine the amount of resolution based upon the full scale resolution of the analog to digital converter, a target resolution, where the target resolution is the resolution necessary to decode the desired radio channel, assuming that potentially interfering radio channels are filtered out.

Hellmark (US 6,504,863) discloses:

a power detector (650; fig. 6A) having an input in communication with the digital output of the analog to digital converter (620) (col 8, lines 20-40);

a selector (680; fig. 6A) that has an input in communication with the output of the power detector so as to select the resolution necessary to decode the radio channel to based upon the received signal strength (col 8, lines 41-53; col 9, line 57 – col 10, line 12).

However, Mouldsley, Hellmark, and the cited prior art fail to disclose:

a) the ADC having a full scale resolution and operable at a resolution that can be less than the full scale resolution; the ADC operable at a resolution that can be less than the full scale resolution;

c) the control logic determines the amount of resolution based upon the full scale resolution of the analog to digital converter, a target resolution, and the received signal strength where the target resolution is the resolution necessary to decode the desired radio channel assuming that potentially interfering radio channels are filtered out; and communicating this determined amount to the ADC.

Regarding claim 42, Mouldsley (US 6,515,609) discloses a radio receiver (fig .1) having adjustable dynamic range, comprising:

an antenna (10);

means (14) for amplifying a desired radio channel (col 3, lines 4-6);

an analog to digital converter (32, 33), the ADC operable at a dynamically adjustable resolution based on adjacent channel interference (col 2, lines 7-10), the

Art Unit: 2685

ADC converting the desired radio channel at the input of ADC (32, 33) to a digitized radio channel at the output (34) (col 3, lines 12-25);

wherein the radio receiver further comprises:

a measuring stage (30, 31) having an input in communication with the analog input of the ADC (32, 33) so as to measure the signal characteristics of the radio channel (col 3, lines 29-34; col 4, lines 12-17);

control logic (36) that has an input in communication with the interference measuring stage (30, 31) so as to determine the amount of resolution based upon the characteristics of the input signal and the adjacent radio channel interferences (col 3, lines 29-34; col 4, lines 5-16).

means for communicating the determined amount of resolution to the ADC (output from 36 to Q1, Q2) so that the ADC operates at the resolution (col 3, lines 32-34).

Moulsley (US 6,515,609) fails to disclose:

a power detector having an input in communication with the digital output of the analog to digital converter so as to measure the RSSI of the radio channel;

control logic that has an input in communication with the output of the power detector so as to determine the amount of resolution based upon the full scale resolution of the analog to digital converter, a target resolution, where the target resolution is the resolution necessary to decode the desired radio channel, assuming that potentially interfering radio channels are filtered out.

Hellmark (US 6,504,863) discloses:

a power detector (650; fig. 6A) having an input in communication with the digital output of the analog to digital converter so as to measure the signal quality, i.e. the signal to noise ratio (col 8, lines 30-40);

and a selector (680; fig. 6A) for selecting the resolution necessary to decode the radio channel based on the signal quality (col 9, line 57 – col 10, line 12).

However, Mouldsley, Hellmark, and the cited prior art fail to disclose:

the ADC having a full scale resolution;

means for decoding the digital signal to obtain the desired radio channel;

the control logic determines the amount of resolution based upon the full scale resolution of the analog to digital converter, a target resolution, and the received signal strength where the target resolution is the resolution necessary to decode the desired radio channel assuming that potentially interfering radio channels are filtered out.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Liebetreu et al (US 5,721,756), Digital Receiver With Tunable Analog Parameters and Method Therefor.

- Sakuma (US 6,671,331), Carrier Detecting Circuit for Detecting the Level of a Received Signal and Communication Apparatus.

- Johnson et al (US 6,686,957), Preview Mode Low Resolution Output System And Method.

- Smith (US 5,926,218), Electronic Camera with Dual Resolution Sensors.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N Le whose telephone number is (703) 308-5836. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2685

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, appearing to read "Lana Le".

Lana Le

June 10, 2005